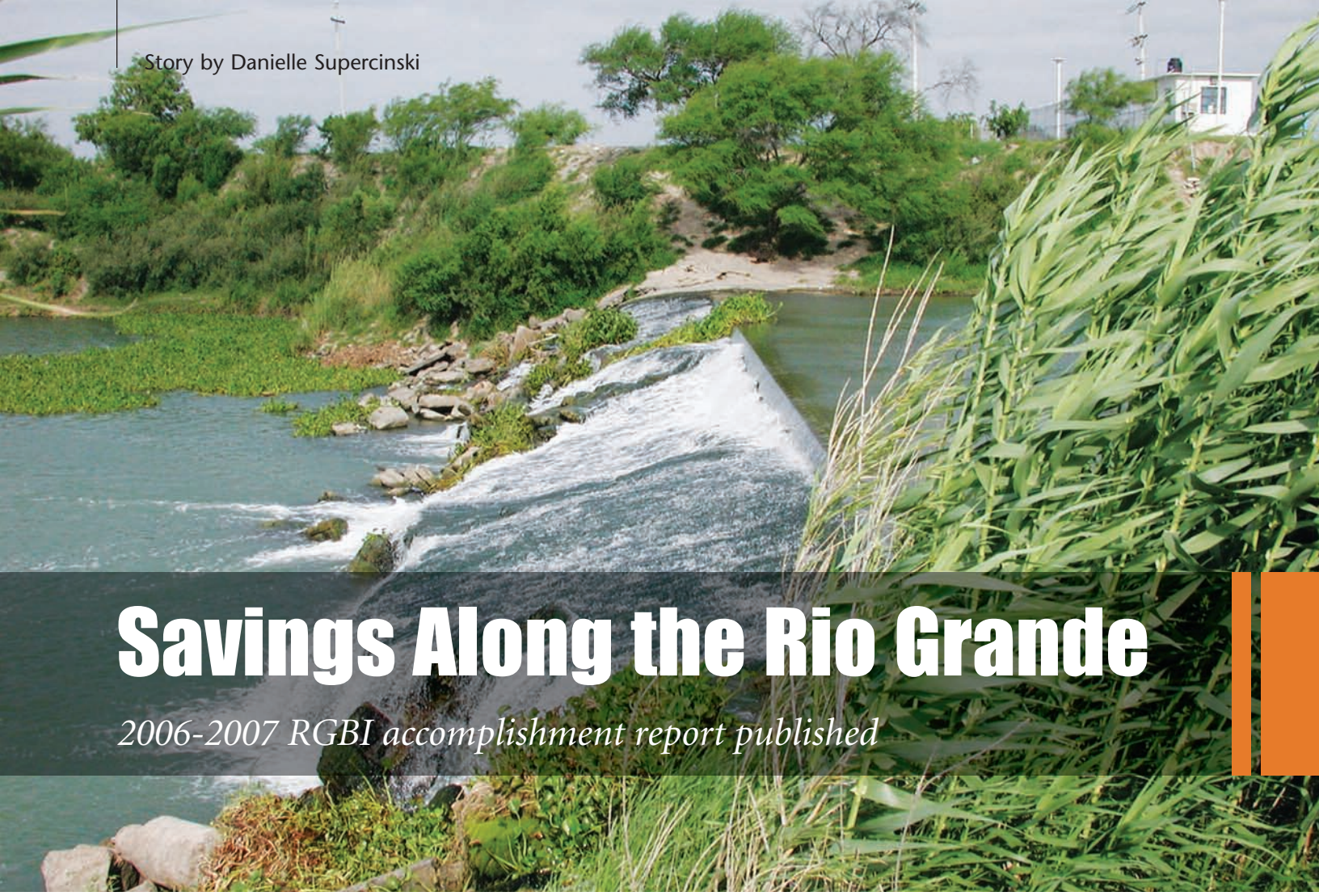
Story by Danielle Supercinski



Savings Along the Rio Grande

2006-2007 RGBI accomplishment report published

Conserving water is vital for the Rio Grande Basin, one of the most productive agricultural areas in the United States. Irrigated agriculture claims 85 percent of its water, and urban water use is expected to double in the next 50 years.

Texas and New Mexico Agricultural Experiment Station researchers and Cooperative Extension specialists and agents have tackled these issues and their achievements were reported in the Rio Grande Basin Initiative (RGBI) *2006–2007 Progress and Accomplishments Report*, published in May 2007.

Results range from development of new models, more efficient irrigation technology, new Web site components, rehabilitation of irrigation district infrastructure and activities to promote in-home water conservation. The report showed that cost and water savings as well as new, more efficient technologies impact the basin the most.

One example of these new technologies is the DESAL ECONOMICS© model, an Excel® spreadsheet, developed by the RGBI Extension economics team. This model calculates life-cycle costs of desalination per acre-foot and per thousand gallons. The team designed this model for economic and financial analyses of desalination facilities and the model is broadly applicable across many types of facilities.

VIDRA©, Valley Irrigation District Rate Analyzer, another spreadsheet model, helps irrigation districts understand scenarios of likely financial outcomes in changing water delivery rates to agricultural, municipal and industrial users. Seven irrigation districts are currently using VIDRA, with one district collaborating to develop a customized version.

Extension engineers, working with RGBI, assist irrigation districts in completing project applications by analyzing the conditions, water losses and potential

water savings in irrigation canals. Irrigation districts have saved from 290 to 6,500 acre-feet of water per year from canal replacement, lining and/or seepage-loss testing. In addition, technical support from Extension engineers have saved districts more than $180,000 on engineering services.

On-farm studies resulted in an average 25 percent to 40 percent water savings with drip irrigation systems while maintaining similar yields using furrow irrigation. Watermark sensors can help farmers estimate water requirements for more precise irrigation and improved yields with the potential to conserve between 7,500 and 10,300 acre-feet of water per year valley-wide on cucurbits.

To promote in-home water conservation, Extension specialists and agents conducted an in-home water conservation study of 24 households in eight counties in the basin. Each household received one of three types of conservation training and, as a result, reduced water use from 4 percent to 21 percent, saving 400 to 3,000 gallons of water. RGBI also promotes rainwater harvesting and efficient landscape irrigation as other methods of conserving water.

Other RGBI efforts continue to yield even more accomplishments. Researchers analyze water samples for animal and human viruses and indicator organisms, study giant cane control agents, identify weed management programs for noxious weeds and analyze sap-flux and water-use estimates for saltcedar trees. Publications developed from this research address irrigating urban landscapes with moderately saline water. Researchers have also acquired a user-friendly framework for Rio Grande Basin Web sites, adding real-time data, query functions and other data to the water resources database. They are also developing an interactive statewide county mapping system to provide a resource geographic information systems (GIS) database.

In addition to accomplishments, collaboration is key to this project. Collaborators and the efforts they contribute to the project were highlighted in a new section of the report this year. More than 100 collaborators are listed.

Water and cost savings continue to be the main focus of RGBI as the basin's population, costs and water demands increase. Therefore, RGBI researchers, specialists and agents continue their efforts to produce even greater outcomes and results.

To download the accomplishment report or for more information on the 2007 conference, visit **riogrande-conference.tamu.edu/wrapup/2007/**.

To comment on this article, visit its electronic version at **twri.tamu.edu/news/2007**.

Watch Dog watermark sensors are installed in this onion field to monitor the amount of irrigation. Watermark sensors can help farmers estimate water requirements and become more precise in irrigating and improving yields. *Photo from Juan Enciso*